

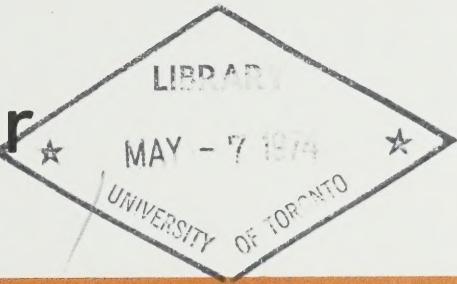
Min. of Agriculture - Economics Branch, General publication

**SHEEP PRODUCTION IN THE
OUTAOUAIS REGION OF QUEBEC
1970**

working paper

G-54

CAI
DA 22
-73 P06



Agriculture
Canada



Canada Dept. of Agriculture. Economics Branch.
[General Publications]
66-54// 7

CAI
DA 22

- 73P06



SHEEP PRODUCTION
in the Outaouais Region of Quebec (1970)
working paper

A Federal Employment Stimulation Project

Technical and economic results. Production and marketing methods.
A study of 33 farms.

Farm Management Division
Agriculture Canada
550 Sherbrooke Street, West
Room 1550
Montréal 111, Québec

Study completed in May 1972

Economics Branch Publication No. 73/6

December 1973

Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

<https://archive.org/details/31761115517278>

PREFACE

This study on 1970 Sheep Production in the Ottawa Valley Region is part of a series of research studies on the reorganization of Agriculture in the Province of Quebec. They were initiated and carried out by Agriculture Canada, Farm Management Division in Montreal, during 1970-71 and 1971-72.

The Farm Management Division in Montreal identified within a wide conceptual framework two distinct aspects of agricultural reorganization which have been taking place for about ten years in Quebec:

- 1) Structural adjustments within the farm sector undertaken by farmers abandoning one type of farm speculation to undertake another which seems to offer more interesting prospects, whether from the standpoint of growth potential or that of family farm income;
- 2) Structural adjustments in agriculture bringing about a reduction in manpower in the agricultural sector, and involving farmers who either become inactive through retirement, or who turn toward employment in secondary or tertiary sectors after giving up farming.

Sheep production is one farm speculation which at first glance seems to enjoy a considerable growth potential in the outlying regions of the province, with good possibilities of a satisfactory standard of income. Thus, it could be an alternative for farmers who would like to give up poor growth speculations such as industrial milk production.

However, information on production methods, technical and economic results and sheep marketing in the outlying areas of the province, like the Ottawa Valley, the Lac St-Jean and the Eastern Townships is rare. Pioneer work has already been accomplished in Eastern Quebec by Professor Benoît Dumais of Laval University and Marcel Gagnon, M.A.. During the 1969-1970 they conducted a research project on the technical and economic aspects of sheep production in the Gaspé-Lower St. Lawrence Valley Region¹⁾. This study was followed by a thesis written by Marcel Gagnon on the same subject²⁾.

1 "Etude Technico Economique de la Production Ovine dans la Région Gaspésie-Bas St-Laurent" B. Dumais Faculté d'Agriculture Université Laval T-31-3B August 1970.

2 "La Production Ovine dans la Gaspésie-Bas St.-Laurent". Mr. Marcel Gagnon. Faculté d'Agriculture, Université Laval, January 1972.

To make up for this lack of information on sheep production, the Farm Management Division initiated three research studies on sheep production in the Ottawa Valley, Lac St-Jean and Eastern Townships in 1970-71 and 1971-72. These studies dealt with farms where sheep production was or could become a viable speculation and they were extended to include the technical and economic aspects and the marketing methods of production.

The Farm Management Division also initiated a study in 1971-72 dealing exclusively with the marketing of light lamb in Eastern Canada.

This is the first of a three-part regional study of sheep production. It was conceived to present the information obtained during research, in a similar manner to the presentation adopted by Professor B. Dumais and Mr. Marcel Gagnon in their studies. Researchers interested in studying sheep production in the regions of Eastern Quebec, the Ottawa Valley, the Lac St-Jean and the Eastern Townships will then have comparable studies at their disposal and will consequently be in a better position to grasp the overall problems of sheep production in the province.

The questionnaire used by researcher R. Donaghey, agronomist, was elaborated by the Research Division of the Economics Branch of Agriculture Canada but it was amended after consultation with Professor Benoît Dumais and Mr. Marcel Gagnon. The survey took in all farms in the Ottawa Valley area which had more than 30 ewes and which took part in the Sheep-Raising Club of the area and were identified by the Regional services of the Quebec Department of Agriculture and Colonization (D.A.C.) in Buckingham. Farms having less than 30 ewes were not the subject of the survey as their scale of production was believed to be too small to meet the aims of the survey.

The survey could not have been carried out without the close cooperation of Mr. Robert Samson, C.D.A. Regional Coordinator, who contributed to the success of the project by generously giving his advice during the different phases of its completion. The help provided by the regional sheep production specialist, Mr. Gonzague de Mauraige, was equally valuable.

The computerization of data was undertaken by the Rural Economics Department of Laval University's Faculty of Agriculture. Mr. Marcel Gagnon was put in charge of drafting the Final Report of the study and Professor B. Dumais revised the final copy.

The Farm Management Division in Montreal would like to thank the Quebec Department of Agriculture and Colonization and all those who took part in the different phases of this research.

Dr. Gabriel S. Saab
Officer in Charge

Farm Management Division
in Montreal,

May 1972.

CONTENTS

	<u>Page</u>
Preface	i
Table of Contents	iv
List of Tables	vi
List of Annexes	vii
Introduction: Objectives, Framework and Methodology	1
Chapter I: Farm Structure and Production Results for 1970 ...	3
<u>Section 1. : Farm Structure</u>	4
1.1: Physical Resources	4
1.11 : Land	4
1.12 : Livestock	5
1.13 : Sheep Buildings	5
1.14 : Labour	5
1.2: Investments	6
1.21 : Sheep	6
1.22 : Sheepfold	6
1.23 : Sheep Equipment	6
1.24 : Sheep Pastureland	6
1.25 : Total Capital Invested	6
<u>Section 2. : Technical Efficiency</u>	7
2.1 Flock	7
2.2 Sheep Buildings	8
2.3 Marketing	9
2.4 Feed	9
2.5 Labor	10
<u>Section 3. : Farm Account</u>	11
3.1 Gross return	11
3.2 Specific Expenses	11
3.3 Divided General Expenses	12
3.4 Remuneration for Labor and Management vs. Estimated Value of Labor and Management	12
<u>Section 4. : Production Costs</u>	13
4.1 Specific Expenses per Ewe and per Surviving Lamb ..	13
4.2 Distributed General Expenses per Ewe and Surviving Lamb	13
4.3 Total Expenses per Ewe	14
4.4 Net Cost per surviving Lamb	14

	<u>Page</u>
<u>Section 5. : Economic Efficiency</u>	14
5.1 Gross Return per Ewe	14
5.2 Average Price of Market Lambs	15
5.3 Capital Investment in Sheep per Ewe	15
5.4 Remuneration for Labor and Management	15
5.5 Grazing Cost / Acres of Pasture	15
<u>Chapter II. : Production and Marketing Methods</u>	17
<u>Some of the Farmers' General Remarks</u>	
<u>Section 1.: Production Methods</u>	17
1.1 Ewe Fertility	17
1.2 Frequency of Twin, Triple and Quadruple Births	17
1.3 The most important Breeds	17
1.31 : Ewes	17
1.32 : Rams	18
1.4 Lamb Losses	18
1.5 Adult Losses	19
1.6 The Age at Which Ewe-Lambs are Bred	19
1.7 Lambing Areas	19
1.8 The Type of Protection Provided for the Flock at Night During the Grazing Period	20
1.9 The Age at which Lambs are Weaned	20
1.10 Fall Flushing	20
1.11 Parasite Control	20
1.111 : Control of External Parasites	20
1.112 : Control of Internal Parasites	20
1.12 Castration	20
1.13 Tail Cutting	20
1.14 Sheep Buildings	21
1.15 Sheep Pastures	21
<u>Section 2.: Marketing Methods</u>	21
2.1 Lambs	21
2.2 Wool	21
<u>Section 3.: Some of the Farmers' Remarks</u>	22
3.1 Medium-Term Projected Flock Size	23
3.2 The Most Important Reasons for Choosing to Raise Sheep	23
3.3 The Most Important Problems Encountered	23
<u>Conclusion</u>	25
<u>List of References</u>	27
<u>Annex I : Definitions, Standards, Conventions</u>	28
<u>Annex II : Data connected with Market Lambs Listed by Producer and Shipment</u>	33

LIST OF TABLES

			<u>Page</u>
Table 1.	: Physical Resources.	Stratum I	36
Table 2.	: Physical Resources.	Stratum II	37
Table 3.	: Investments.	Stratum I	38
Talbe 4.	: Investments.	Stratum II	39
Table 5.	: Technical Efficiency.	Stratum I	40
Table 6.	: Technical Efficiency.	Stratum II	42
Table 7.	: Sheep Farm Account.	Stratum I	44
Table 8.	: Sheep Farm Account.	Stratum II	46
Table 9.	: Sheep Production Costs	Stratum I	48
Table 10.	: Sheep Production Costs	Stratum II	50
Table 11.	: Economic Efficiency	Stratum I	52
Table 12.	: Economic Efficiency	Stratum II	53

LIST OF ANNEXES

	<u>Page</u>
Annex I. Definitions, Standards, Conventions	28
Annex II. Data connected with Market Lambs Listed by Producer and Shipment	33

INTRODUCTION: Objectives, Framework and Methodology

The object of this study was to learn something of the technical and economic situation of sheep production in the Ottawa Valley Region. At the same time it sought to identify certain characteristics connected with production and marketing methods.

This study was carried out in 1971 and the financial year ran from January 1 to December 31, 1970.

Data were gathered following individual interviews with farmers and were compiled by means of a detailed questionnaire prepared by the Farm Management Division of Agriculture Canada in Montreal.

The survey reached 33 farmers who raised sheep on either part or all of their farm and who had flocks of 30 ewes or more at the beginning of winter, 1970.

The Ottawa Valley Region had a total of 3,500 full-grown sheep on December 1, 1970. The 33 farms under study at that time had 2,387 full-grown sheep, representing 68 percent of the regional total. It should be pointed out that a large proportion of lambs were sold for the light lamb market.

Of the farms studied, two groups were formed: those with flocks numbering between 30 and 60 ewes, and those with 60 or more ewes. The size of these two groups was determined on the basis of the method used for studying sheep production in the Gaspé-Lower St. Lawrence (3). The method scientifically fixed the limits of the groups, taking into account the flock density for specific sizes.

Considering the high representation of sheep studied in relation to the total sheep population and the desire to draw comparisons with the Gaspé-Lower St. Lawrence study, we chose in this study to create production groups having limits in size identical with those in the above study.

This study was jointly carried out by the Farm Management Division, Agriculture Canada in Montreal, which among other things financed the survey, and by the Regional Office of the Quebec Department of Agriculture and Colonization in Buckingham.

Among those who worked with us, we would like to make special mention of Messrs. Gonzague De Mauraige, Richard Donaghey, Norbert Dubé, Yvan Girard, J. Moreault, Robert Richer, Gabriel Saab, and E.A. Tittley, and the farmers who agreed to take part in the survey. Our apologies, if we have forgotten the names of some people.

CHAPTER I

Farm Structure and Production Results for 1970

This chapter aims especially at showing the resources used for production and the results obtained by sheep speculation for the 1970 financial year.

The term "sheep speculation" means that only sheep production is involved as far as farms are concerned so that the production of feed grains, except for sheep pastureland, and any other speculation are not included in the study strictly speaking.

The resources used are respectively: the flock, the sheepfold, sheep pastureland, sheep equipment and labour.

When farming includes other resources (cattle, swine, other pastureland, etc.,) only the relative importance of these resources in relation to sheep will be considered.

The technical and economic results obtained for the 1970 financial year will be divided into the following sections:

- Technical Efficiency
- Farm Account
- Production Costs
- Economic Efficiency

The "resources" and "results" data will be shown according to a so-called "group analysis" method. For each stratum (I and II), we will have a "Top", "Bottom", and "Intermediate" group. The "Top" and "Bottom" groups respectively include one sixth (1/6) of constituent parts of the stratum while the "Intermediate" group includes two thirds (2/3) of the constituent parts.

Finally, to allow a better comparison and analysis, the average of each stratum will be added. Remember that Stratum I includes flocks of between 30 and 60 ewes while Stratum II includes those with 60 or more.

It is important to understand that the results are a mathematical average in the sense that individual data of a group are added first, and afterwards divided by the number of individuals in the group, not necessarily by the number of those who declared a result. However, this very rarely poses a problem of interpretation since all farming operations offer a result for the majority of items.

SECTION 1. - Farm Structure

1.1 - Physical Resources

We will present the overall picture of farming of which sheep speculation is just a part. We will also find the quantification of resources for sheep production proper. (See Tables 1 and 2)

1.11 - Land

Cleared and Uncleared Area

Cleared area, at first observation, seems rather limited. The average per farm in Stratum I (30-60 ewes) is 116.2 acres and 133.8 acres in Stratum II (60 ewes or more).

The uncleared area is relatively large, Stratum I shows an average of 217.5 acres/farm, while it is only 145.2 acres in Stratum II.

These two items could be of importance in terms of production development.

Area of Sheep Pastureland

The area of sheep pastureland is practically identical with the average in each of the strata. Stratum I shows a per farm average of 45.4 acres while Stratum II has on the average 42.1 acres. From the standpoint of technical efficiency the relation between the area of sheep pastureland and the number of full-grown sheep will be seen. In addition the farm account and the cost of production will be affected by this criterion.

If the analysis is extended within each stratum, we observe that for Stratum I, the "Bottom" Group has double the area of sheep pastureland to that for the "Top" Group (38.7 acres: 72.5 acres). In Stratum II however, the areas are almost identical (30.7 acres: 34.0 acres).

1.12 - Stock

Sheep Animal Units/Total Animal Units (%)
(% S.A.U. / T.A.U.)

Another interesting point is the relative importance of sheep in relation to other farm animals.

This relative importance is expressed as a percentage of Sheep Animal Units (S.A.U.) over Total Animal Units (T.A.U.).

In Stratum I the average is 66.1 percent, while in Stratum II it is 78.1 percent. Despite the difference between the two, sheep production can be seen to represent an important part of all farm stock, hence a certain form of specialization.

For each stratum the "Top", "Intermediate" and "Bottom" Groups resemble the average of the stratum except for the "Bottom" Group in Stratum I.

Sheep Animal Units (S.A.U.)

As it can be observed, there is little difference between the groups and the two strata, meaning that the size will have little influence on the economic success or failure within a stratum.

1.13 - Sheep Buildings

It is hard at this point to judge the efficient use of sheepfold areas, but it seems that the difference between Strata I and II reflects bigger flocks. However the "Top" Group of Stratum II offers a special situation which will be analyzed later.

1.14 - Labour

Tables 1 and 2 show a remarkable phenomenon for work entirely devoted to sheep. Stratum II shows a lower average of working hours than Stratum I and since these two strata are of different sizes, it would appear that the farmers of Stratum II are more efficient. The effect of size will be more evident when a more extensive analysis is carried out.

1.2 - Investments

Having noted the place of sheep speculation in farming and the physical resources used for sheep production, we will show the importance of investments connected with each resource as well as with resources as a whole. (See Tables 3 and 4)

Sheep speculation includes four main types of resources: sheep, sheep-fold, equipment and sheep pasture.

1.21 - Sheep

The value of the flock is based on the number and age of units so that flocks of identical size can show very different values. For instance a flock with a majority of ewes which are more than 5 years old would indicate a lower invested capital than a well balanced flock.

(See Annex 1 Page for the Scale of Values)

1.22 - Sheepfold

As far as the sheepfold is concerned, since the value is above all closely related to age, the values may have absolutely nothing to do with the size of flocks or economic success.

1.23 - Sheep Equipment

Equipment represents a small part of invested capital. It is important to point out that this item did not appear in Subsection 1.1 because of description and presentation difficulties.

1.24 - Sheep Pastureland

The value of sheep pastureland is closely related to the market value of each sector (parish). These values were supplied by the Ottawa Valley Regional Farm Office. For the two strata, this value represents around 30 percent of total capital (average).

1.25 - Total Capital Invested

The total investment in Stratum I is on the average \$4,904.00 per farm for 43 ewes, while it is \$8,821.00 for 86 ewes in Stratum II. We therefore note that, as far as the average of each stratum is concerned, the invested capital is closely connected with the size of the flocks although average capital in Stratum II is proportionally lower than in Stratum I.

SECTION 2. - Technical Efficiency

Since we now have the farm picture, we will see the technical results as far as the flock, sheep buildings, marketing, feed and labor are concerned. This section is one of the most important because these results will have some bearing on the economically influenced sections. (See Tables 5 and 6).

2.1 - Flock

Ewes with Lamb/Bred Ewes

According to the information on tables 5 and 6, it seems that the problem is at the group level. Actually while the "Top" Groups of Strata I and II got 0.98 and 0.97 ewes with lamb/bred ewes, the "Bottom" Groups got 0.76 and 0.83 respectively.

Fertility rate of Ewes (Lambs Born / Ewes with Lamb)

This criterion is very interesting since it is the basis of the volume of production. The results observed are for the "Top" Groups of the two strata 1.61 and 1.56 lambs born / ewes with lamb. On the other hand the average of the strata is 1.49 and 1.39. Finally the "Bottom" Groups obtained 1.17 and 1.35 lambs born / ewes with lamb.

Therefore, except for the "Bottom" Group of Stratum I (30-60 ewes), the results are satisfactory. Later, we will see if the difference between the "Top" and "Bottom" Group of this criterion will be related to economic success.

Lambs Surviving / Ewes with Lamb

In order to properly analyze this criterion, which is probably one of the most important in the study, we will give the results on born, surviving and lost lambs.

Criteria	Stratum I				Stratum II			
	Top	Int.	Bot.	Avg.	Top	Int.	Bot.	Avg.
Lambs Born/Ewes with Lamb	<u>1.61</u>	1.52	<u>1.17</u>	1.49	<u>1.56</u>	1.36	<u>1.34</u>	1.39
Lambs Surviving/Ewes with Lamb	<u>1.55</u>	1.26	<u>0.88</u>	1.27	<u>1.44</u>	1.09	<u>0.98</u>	1.13
% of Lamb losses	<u>3.7</u>	18.1	<u>25.0</u>	16.4	<u>8.1</u>	18.9	<u>27.0</u>	18.4

What strikes here as far as surviving lambs are concerned, is the big difference between "Top" and "Bottom" Groups. It is 0.67 for Stratum I and 0.46 for Stratum II. This difference represents a considerable volume from a sales standpoint. The percentage of lamb losses enables us to note this phenomenon even more readily. In Stratum I there is a 21 percent difference in lamb losses between "Top" and "Bottom" Groups, while this difference is 19 percent in Stratum II.

The "Top" Groups of the two strata have "reasonable" lamb losses, showing that it is possible to limit losses. However, average losses in the Strata remain high with 16.4 and 18.4 percent.

It is hard to work out a reasonable rate of loss. In the Gaspé-Lower St. Lawrence study (3) the average losses for strata of the same order were 21.4 and 15.2%. The problem of lamb losses is a subject which could be studied more thoroughly by livestock specialists since it seems to be generalized.

Adult Losses (%)

Since the averages of the two strata are in the order of 6 percent, it is not necessary to analyze this criterion thoroughly, although it merits special attention since the age of ewes can be a determining factor in ewe and lamb losses. Another chapter will deal with this point.

Rate of Growth (%)

To conclude the flock analysis, it is interesting to point out that on the average, the rate of flock growth is 25 percent in Stratum I and 2 percent in Stratum II. This indicates a trend where farmers in Stratum I increase the size of their flocks while those in Stratum II seem to maintain the size of their flocks. This observation is based on the results of only one year of production.

2.2 - Sheep Buildings

What holds our attention here is the space used by the full-grown animal in the sheepfold. The average in Stratum I is 33 sq. ft. while in Stratum II it is 20 sq. ft. There is considerable variations in space per sheep among the groups so that it is hard to make an analysis. However, the rural construction standard is 25 sq. ft., per sheep, and this is the average for all farms. Even so, it can be concluded that in general there is under-utilization of available space.

2.3 - Marketing

No. of Market Lambs Sold

Since marketing will be dealt with in detail in a later chapter, we will only mention the considerable difference between the "Top" and "Bottom" Groups of the two strata. There is a ratio of 3 to 1 between the "Top" and "Bottom" Groups. This would indicate that the amount of sales is considerably reduced in the "Bottom" Groups while the size of flocks within a stratum is appreciably the same. The connection between this criterion and lamb losses can be easily made.

No. of Livestock (Female) Sold

In Stratum I, the "Top" and "Bottom" Groups show high figures in relation to the "Intermediate" Group. On the other hand, in Stratum II the situation is the opposite. The "Top" and "Bottom" Groups only slightly affect sales, contrary to the "Intermediate" Group.

Average Weight / Market Lamb Sold (Light & Heavy)

These figures are revealing in that the average weight of lambs sold is very different for the "Top" and "Bottom" Groups. The farmers of "Top" Groups sell a greater proportion of light-type than heavy-type lambs in relation to the other groups. On the whole, the average weight of lambs sold is 45 pounds live weight. This means that producers deliver, to market, lambs whose weight varies considerably according to the period when delivery is made. (See Annex 2 for a descriptive table of these sales).

2.4 - Feed

Amount of Hay Consumed / Full-Grown Sheep

It can be observed that on the average a full-grown sheep consumes 962 pounds of hay in Stratum I and 906 pounds in Stratum II. Analyzing the groups of each stratum, we note that there is a difference between the "Top" and "Bottom" Groups.

In Stratum I the difference is 400 pounds per adult more for the "Bottom" Group while it is 228 pounds more in Stratum II for the corresponding group. If this difference is considered in terms of cost, it means that for the "Bottom" Groups there are additional costs per ewe of \$4.00 and \$2.88 (supposing that hay is evaluated at \$20.00 per ton). However, it must not be forgotten that the amount consumed per ewe can vary depending on the quality of hay.

Amount of Concentrates / Full-Grown Sheep

Once again considerable differences can be observed between "Top" and "Bottom" Groups. Thus in Stratum I, the "Top" Group shows a consumption of 105 pounds per adult and 287 pounds per adult for the "Bottom" Group. In Stratum II the "Top" Group shows a level of 120 pounds per adult and the "Bottom" Group 139 pounds. The average of Stratum I is 166 pounds against 155 pounds for Stratum II.

As observed, both for hay and concentrates, the farmers of Stratum II seem to exercise a better control over feeding.

Area of Sheep Pastureland / Adult Wintered

A large difference can be noted between Strata I and II. The average acreage per adult wintered for Stratum I is 1.11 acres, while for Stratum II it is 0.47.

Here, Stratum II shows a better balance than Stratum I, indicating that Stratum II farmers exercised good feeding control.

Feed Produced Compared with Feed Consumed (%)

Since results are rather high, it can be noted that feeding depends little on external supplies and, at the same time, ensures more efficient use of machinery.

2.5 - Labor

Hours / Year / Ewe Wintered

It is surprising to note that in Stratum I twice as many hours of work per ewe are needed than in Stratum II (16.95 hours versus 8.19 hours). There is a considerable difference between the two strata. Size and labor efficiency are definitely responsible for this difference.

SECTION 3. - Farm Account

We will study the main components of the farm account. Expenses do not appear in the usual manner but this was done in order to reconcile these expenses with the cost of production.

3.1 - Gross Return

Analysis of the farm account shows us, first of all considerable differences between the "Top" and "Bottom" Groups as far as gross returns are concerned. In Stratum I the gross return for the "Top" Group is \$1,905.00, while it is only \$640.00 for the "Bottom" Group. In Stratum II the results are \$3,574.00 for the "Top" Group and \$1,891.00 for the "Bottom" Group. There is therefore a ratio of 1 to 5 in Stratum I and 1 to 2 in Stratum II.

Since it has already been seen that the size of flocks differs little among the different groups of a given stratum (See Table on Technical Efficiency), it can be noted that the gross return is closely related to technical efficiency as far as lamb losses and possibly unit prices of lambs sold are concerned.

Finally we noted that animal sales made up the largest part of gross returns, especially market lamb.

3.2 - Specific Expenses

Except for the "Bottom" Groups, the specific expenses of "Top" and "Intermediate" Groups are not too different, which leads us to think that farmers in these groups use relatively similar production methods.

Once again the "Bottom" Groups show large differences in comparison with other groups. Thus a low gross return and high specific expenses render profits precarious.

Analysis of these expenses shows that feed expenses represent a higher and higher proportion of specific expenses in the "Top" and "Bottom" Groups. This is due to over-consumption for the "Bottom" Groups.

In fact, if the connection is made between specific expenses and gross return, it will be noted that the "Bottom" Groups especially are already in an adverse situation. However, it is not a cash deficit, since certain elements of the return are estimated and some specific expenses do not involve any monetary circulation, such as interest on livestock. In addition the cost of pasturing does not represent all the money actually paid out.

In conclusion, the more positive difference there is between gross return and specific expenses, the easier sheep speculation will be able to meet so-called divided general expenses and satisfactory payment of work and management.

3.3 - Divided General Expenses (other than work and management)

This expense group is not as large as the previous group. Once again, the "Bottom" Groups show higher expenses than the "Top" Groups. However, on the whole, these expenses are closely related to farm structure and cannot be easily controlled.

3.4 - Remuneration for Labor and Management vs.
Estimated Value of Labor and Management

First of all, remuneration for work and management is the difference between the return and the specific and general expenses. It represents that which the farmer obtains for his work and management. We have immediately placed afterwards, what the farmer should get if he wants to receive \$1.50 / hour for his labor and management, independent of his efficiency at work. (hours / ewes).

Negative results as far as profit or loss is concerned are not to be taken too seriously. First of all it is not a cash gain or deficit as pointed out previously and, in addition, the standards used for estimated costs are rather strict.

What is important to note is that the "Top" Group of Stratum II manages to cover its obligations and even to pay itself almost \$1.50 / hour. For the "Top" Group of Stratum I, since work totals 17 hours / ewe against 8 hours for Stratum II, it is quite obvious that by cutting time devoted to sheep, farmers of this group would have had a remuneration for their labor and management of \$1.00 an hour for 10 hours per ewe and \$1.25 an hour for half as much labor, which seems possible if results observed elsewhere are taken into account, in particular in the Gaspé - Lower St. Lawrence study. (3)

To conclude this section, we have noted that the farm account is the dollar representation of technical efficiency, both for the gross return and the specific and general expenses.

SECTION 4. - Production Costs (See Tables 9 and 10)

This section compares results of expenses per ewe and per surviving lamb for specific, divided general and total expenses.

In addition, the net production cost per ewe and per lamb will be studied.

It goes without saying that the basic information is identical with that in the farm account, except that general expenses include remuneration for labor and management.

4.1 - Specific Expenses per Ewe and Per Surviving Lamb

It will be noted that the specific expenses per ewe are very different between the "Top" and "Bottom" Groups. In fact in Stratum I, the specific expenses per ewe are \$22.00 for the "Top" Group and \$42.00 for the "Bottom" Group. In Stratum II the "Top" Group shows expenses of \$18.00 per ewe against \$27.30 for the "Bottom" Group.

As previously mentioned, feed cost is largely responsible not only for the specific expenses total but also for the differences between "Top" and "Bottom" Groups.

There is possibly an effect of size since the "Top" Group of Stratum II shows lower specific expenses per ewe than the "Top" Group of Stratum I. The phenomenon is even more marked for the "Bottom" Groups (\$42.00 and \$27.30).

As far as specific expenses per surviving lamb are concerned, not only is there an effect of size but also an effect related to technical efficiency (% of lamb losses). This is the reason for the marked difference between "Top" and "Bottom" Groups.

4.2 - Divided General Expenses per Ewe and per Surviving Lamb (including Labor and Management)

The general expenses per ewe vary considerably from one stratum to another. This is above all due to the fact that in Stratum I working hours per ewe are twice as high as they are in Stratum II. It is also due to the effect of size since, as a rule, these expenses vary little in relation to the volume of production.

On the other hand, as far as the labor factor is concerned, there is still the effect of technical efficiency (e.g.: lamb losses) which influences groups within a stratum. For the "Top" Groups, these costs are \$20.00 per surviving lamb in Stratum I while the cost in Stratum II is \$15.00.

Finally, the average of Stratum I is \$34.00, while in Stratum II it is \$21.00, which is a considerable difference.

4.3 - Total Expenses per Ewe

In Stratum I a ewe must bear total expenses of \$54.00 for the "Top" Group and \$76.00 for the "Bottom" Group. In Stratum II, a ewe bears total expenses of \$39.99 for the "Top" Group and \$52.00 for the "Bottom" Group.

Only the "Top" Group of Stratum II is in a position where it seems possible to meet all expenses (\$39.00). In fact, the gross return / ewe of this group is \$38.24. However, other farms could reach the threshold where expenses are covered by the gross return, but only on condition that lamb losses are reduced, feed costs are lowered and better work efficiency is realized.

4.4 - Net Cost Per Surviving Lamb

To cover his costs, a farmer must sell his market lambs for \$31.00 in the "Top" Group of Stratum I and \$22.80 in the "Top" Group of Stratum II.

For the "Bottom" Groups, since expenses as well as the rate of losses, are high every lamb must bear expenses which are out of proportion.

In short, the farmers of the "Top" Groups of Stratum I and II and the "Intermediate" Group of Stratum II show possibilities of success (\$31.00, \$22.80 and \$34.50), if the number of surviving lambs per ewe increases.

SECTION 5 - Economic efficiency (See Tables 11 & 12)

5.1 - Gross return / ewe

There are appreciable differences in gross return per ewe among groups of the same stratum. Any decrease in the number of lambs lost would make it possible to increase the proceeds of stock sales and thus, reduce the divergence with total expenses.

On the other hand, we feel that some of the farmers in Stratum II could succeed if their gross return came to about \$40.00, since average total expenses come to \$44.40.

5.2 - Average price of market lambs

The results seem mediocre, looking at this type of light lamb market. More sustained marketing would surely produce a rise in these prices. It is essential to consult annex 2, which gives a better idea of the prices paid for market lambs.

5.3 - Capital investment in sheep / ewe

In Stratum I, the average capital investment is \$115.00, compared to \$103.00 in Stratum II. In each stratum, we may observe considerable divergence, partly the result of the age of the buildings and the balance of the flock, two factors which affect the value.

5.4 - Remuneration for labor and management / ewe

Here, only the "Top" groups show acceptable results (\$9.22 and \$11.46). If we compare this with the 1968 study of the Gaspé and Lower St. Lawrence, we see that the results there were \$13.96 and \$15.10. This divergence is partly explained by the reduction in wool subsidies.

Once again, we can confirm that it is possible to succeed, but only on the condition that expert management is applied.

5.5 - Grazing cost / acre of pasture

The results observed must be very carefully interpreted, taking several factors into account. One factor is the value of the land, which depends on the geographic location, the varying land tax rates, the number of acres turned over to sheep, etc. Besides, grazing cost corresponds more to what would be charged for normal management of pastureland than to the expenses actually incurred by the farmers taken individually.

In addition, we must observe that this item is a serious handicap in any economic study. Special research devoted to this area would make a considerable contribution to economic studies.

Productive well-managed pastureland (rotation) would no doubt make it possible to improve earning capacity, an improvement which would become apparent in the lowering of feeding costs and general expenses per ewe, while still making it possible to graze a larger number of animal units per acre of pasture.

CHAPTER II

Production and marketing methods

Some of the farmers' general remarks

The purpose of this section is to indicate the tendencies we have observed among producers in general in the area of production and marketing methods. We are also including a few remarks made by the farmers on the subject of the projected size of the flocks, their reasons for deciding to produce sheep and the major problems encountered.

SECTION 1. - Production methods

1.1 - Ewe fertility

% of ewes with lamb/ewes bred

Average

Stratum I	91%
Stratum II	95%

1.2 - Frequency of twin, triple and quadruple

births

Thirty-three farmers declared twin births and the average percentage of ewes with lamb/flock which give birth to twins is 41%. The spread is from 2 to 75%. Fifteen farmers declared ewes which had given birth to triplets. The average is form 1 to 6 ewes/flock. One farmer declared a quadruple birth.

1.3 - The most important breeds

1.31 - Ewes

A major part of the flocks consists of animals in whom the dominant strain is Suffolk. Another portion of the flocks consists predominantly of North Country Cheviot type animals. A few farmers own flocks which are partly purebred.

1.32 - Rams

Suffolk is the most common breed, followed by North Country Cheviot. They are purebred.

1.4 - Lamb losses

Average losses (%)

Stratum I 16.4%

Stratum II 18.4%

Here is a list of the major reasons for which 426 lambs were lost on farms:

<u>Reason</u>	<u>No. of lambs lost</u>
Pneumonia	145
Difficulties at birth	53
Weakness	52
Lack of maternal care	43
Predators	37
Muscular dystrophy	36
Parasites	18
Dysentery	15
Other causes	27

Except for predators, most losses are incurred between February and May.

1.5 - Adult losses

Here is a list of the major reasons for which 98 adults were lost on farms:

<u>Reason</u>	<u>No. of adults lost</u>
Predators	37
Difficulties in giving birth	16
Old age	10
Unknown cases	11
Other causes	24

1.6 - The age at which ewe-lambs are bred

Seven farmers breed ewe-lambs at the age of 12 or more months. Twenty farmers breed ewe-lambs at the age of 6 to 9 months.

1.7 - Lambing areas

Twenty-four farmers have special enclosures for lambing. The number of enclosures varies with the size of the flock.

1.8 - The type of protection provided for the flock at night during the grazing period

Twenty-three farmers herd the flock into buildings for the night. Eight farmers put the flock into a yard. Two farmers leave the flock unprotected.

1.9 - The age at which lambs are weaned

Sixteen farmers wean their lambs at the age of 4 to 6 months. Twelve farmers say that they wean their lambs when they are sold. Two farmers do not worry about weaning.

1.10 - Fall Flushing(feeding the ewes)

Twenty-five farmers practice fall flushing and 23 of these feed their ewes grain.

1.11 - Parasite control

1.111 - Control of external parasites

Twenty-nine farmers carry out this control, usually using a powder to treat both adults and lambs. Eleven farmers carry out this control more than once a year, but most farmers give one treatment in the spring.

1.112 - Control of internal parasites

Thirty-two farmers carry out this control using thibenzole. Twenty-three farmers give more than one treatment per year, either in the spring or in the fall.

1.12 - Castration

Only six farmers use this procedure usually at the age of one to three weeks.

1.13 - Tail cutting

Twenty-eight farmers say that they cut the tails of their lambs. Twenty-four of them do it at less than one month of age.

1.14 - Sheep buildings

The average building is 19.6 years. Of the 43 buildings involved in the study, 14 are 10 years old or less, while 13 are 30 years old or more.

1.15 - Sheep pastures

Twenty-two farmers said that they used cultivated pastureland and seven others said they used permanent pastures, while four farmers have both permanent and cultivated pastureland.

The length of time the sheep are kept in the pasture is about six months, except in a few cases, when it is from five to seven months.

Fifteen farmers rotate their flocks from one pasture to another. This rotation varies from one day to one month. However, most move the flocks every two weeks.

1.16 - Shearing

Thirty-two farmers say that they shear the ewes after lambing season and that they do the shearing from two to three months after lambing time.

SECTION 2. - Marketing methods

In order to carry out a more detailed study of this area, we have included a table in the annex (page 58) which indicates the progress of lamb sales (date, weight, price).

2.1 - Lambs

Most of the farmers market lambs of a light ethnic type.

The lambs which are not sold early in the spring are periodically sent to different markets until the fall. These sales begin in March and continue until November, although most farmers have completed their sales by August.

The Greek and Italian communities of Montreal supply the principal market for lambs marketed in the Ottawa Valley, if one goes by the ethnic origins of the buyers and the destinations of the purchased lambs.

Prices offered per unit for light lambs in the spring stay more or less the same as the season advances, with the result that it seems advantageous to sell market lambs early and thus reduce the risk of losses, pasture time and certain variable expenses.

2.2 - Wool

When the reduction in wool support prices is taken into account, this portion of income tends to become unimportant. Besides, we find that the income from wool per ewe comes only to about half of the income we noted in the Gaspé and the Lower St. Lawrence when we carried out a similar study in 1968. (3)

We must also consider the fact that shearing costs absorb a large portion of this source of income. However, for technical reasons it is difficult to do away with this operation, although research is being carried out which may make it possible to shear in a practical way using chemical processes.

Please note that the number of buyers is limited to three. It appears that the price of the wool sold varies from \$0.17 per pound to \$0.44. To a great extent, the quality is responsible for this variation, although it is possible that buyers facing a problem with the concentration of lots sold may be involved.

SECTION 3 - Some of the farmers' remarks on the subject of the projected size of the flocks, the reasons for choosing to raise sheep and the most important problems encountered.

3.1 - Medium-term projected flock size

<u>No. of farmers</u>	<u>Projected size</u>
8	100 ewes
10	200 ewes
3	300 ewes
12	Status quo

It is interesting that only 3 farmers had flocks of more than 100 ewes at the time of the investigation.

3.2 - The most important reasons for choosing
to raise sheep

<u>Reasons</u>	<u>Frequency</u>
Limited investment	12
Personal cost	11
Less demanding work	6
High remuneration for capital and labour	4
Additional income	4
Limited space requirement	4
Adaptation to slaughter cattle	2

3.3 - The most important problems encountered

<u>Problems</u>	<u>Frequency</u>
Low fertility rate	8
Predators	7
High lamb losses	7
Difficulty of raising capital	7
Lambing season very demanding	3
Lack of management and technical skills	3

<u>Reasons</u>	<u>Frequency</u>
High cost of feed	2
Parasites	2
Price variations	2

CONCLUSION

There are serious problems regarding the earning capacity of sheep production in the Ottawa Valley, as we found in our study.

However, the results achieved by the "Top" groups, especially in Stratum II, show the feasibility of success for a greater number of farmers.

Lamb losses are the most obvious factor needing improvement. At the same time, a better organized marketing system for all farmers could bring in a higher income. Thus, better prices for more lambs sold should provide the farmers with a gross return large enough to cover operating expenses; on the other hand, these operating expenses could be reduced to increase the net income.

As we have seen, the cost of feed seems to be too high for a large number of farmers. In fact, since the quantity of feed consumed plays an important part as far as total expenses are concerned, this criterion should be seriously considered.

We found that several farmers have outside jobs; obviously this is caused by the limited size of their flocks and the small income they draw from them. This factor can lead to the farmer's maintaining only partial control over his flock and its production. There is no doubt that sheep production demands a high degree of management ability from the farmer.

In terms of the development of sheep production, we feel that the farmer must become a specialist if he wishes to realize the maximum net income. And, the farmer who wishes to make a living from sheep production must have a fairly large flock.

If we assume a remuneration for labor and management of \$10.00 to \$15.00 per ewe, we see that the viability threshold is a flock of about 300 ewes. Since few of the farmers have flocks of more than 100 ewes, it would be risky, especially because of the peak periods of work, to triple or quadruple the present size of the flock quickly. Progress must be gradual, so new problems will not be introduced. Besides, the optimum size of the flock may be 200 ewes when income produced by complementary activities is added.

Given knowledge of the area, the Ottawa region agricultural representatives will have the important job of planning this production in the years ahead.

We hope that the data gathered in this investigation will help them in their task.

In conclusion, we must not forget that this study only deals with the 1970 financial year and that further studies are needed to provide data for comparison.

LIST OF REFERENCES

1. Carel, M. 1961: "L'Observation méthodique", Quebec Department of Agriculture and Colonization. Publication no. 248: 31, 33, 32, 34.
2. In collaboration: 1969 - "Planification d'une entreprise agricole du Comté Lotbinière par la méthode de programmation linéaire". Presented as part of CNR course - 503. Department of Rural Economies, Faculty of Agriculture, Laval University, Quebec. pp. 10-11.
3. Gagnon, M. 1972: "La production ovine dans la Gaspésie-Bas Saint-Laurent". Master's thesis. Department of Rural Economies, Faculty of Agriculture, Laval University, Quebec. pp. 27-57, 117, 149.
4. Richer, R. 1971: "Evaluation de bâtiments agricoles par la méthode du coût de remplacement déprécié". Syndicat de gestion agricole, Sabrevoie, Québec. (unpublished text).

ANNEX I

DEFINITIONS, STANDARDS, CONVENTIONS

Most of the technical terms found in the text do not need to be explained. However, we feel it would be advisable to define those that seem to be the most important or the most ambiguous.

These terms appear in the order of the different sections studied under the heading of results.

Animal Units

Cattle, swine and horse A.U.: The coefficients used are taken from the agricultural engineer Maurice Carel's publication which is entitled "L'observation méthodique" (1).

Sheep A.U.: (source: same as for the preceding item (1)).

ram: 0.12 A.U.
ewe: 0.15 A.U.
lamb: 0.07 A.U.

Capital investment in sheep

Sheep stock: The stock was evaluated on a scale which took the age of each unit into account.

Category/age	- 5 yrs.					+ 5 yrs.	
	1 yr.	1-2 yrs.	2-3 yrs.	3-4 yrs.	4-5 yrs.	start	end
Ewe	\$25.*	\$30.	\$30.	\$25.	\$20.	\$15.	\$10.
Ram	According to an estimate for each farm which varied from \$25.00 to \$60.00 with an average of about \$45.00.						

* These are breeding ewe-lambs which come from the flock or are purchased from outside.

ANNEX I (continued)

Sheepfold: The value of the buildings used by the sheep is estimated on the basis of their depreciated replacement cost, which in turn is based on the material making up the floor and the walls. This method was perfected by Robert Richer, agronomist and agricultural representative for the Sabrevoie Syndicat de Gestion. (4)

<u>Floor</u>	<u>Sides</u>	<u>Replacement cost per sq. ft.</u>
Cement	Corrugated steel	\$2.35
Cement	Wood	\$2.50
Dirt	Corrugated steel	\$2.10
Dirt	Wood	\$2.25
Wood	Corrugated steel	\$2.20
Wood	Wood	\$2.35

A cost of \$0.20 per sq. ft. has been added for a barn-stable converted into a sheepfold in order to take the area intended for crop storage into account.

Sheep equipment: The equipment is assessed according to its market value at the time of the investigation.

Sheep pasture-land: The value of the area turned over to sheep pasture was determined for each operation on the basis of market value in that locality. These data were supplied by the regional office of the Department of Agriculture and Colonization of the Ottawa Valley. Values vary from \$25.00 to \$100.00 per acre.

Labor: We are concerned with the hours of work actually devoted to the sheep. The time spent growing feed grains is excluded from these data, since sheep production is being considered as an isolated speculation.

Rate of growth: This item consists of the percentage increase or decrease in the number of ewes at the end of the year compared to the beginning.

Amount of concentrates: This includes the grain, chop and supplements fed to the sheep during the year and especially during the winter.

Gross return: Gross return includes the total taken in from stock sales, income in kind, flock inventory adjustments, wool and the estimated value of the manure, from which amount stock purchases are deducted.

ANNEX I (continued)

Value of the manure produced: Manure is assessed at \$4.00/ton according to the standard used in the study of sheep production in the Gaspé and Lower St. Lawrence (3). Manure production is estimated at 15,000 pounds per 1,000 pounds of live adult sheep. One ewe produces about \$4.50 worth of manure per year.

Specific expenses: These are the expenses which can be directly applied to production and which have no influence on the farm's other speculations. Thus, they are related to the existence of the flock.

Feed produced

Hay: The value of this product depends on the type and quality of the plants. Legumes are assessed at \$25.00 per ton while mixed hay (millet-clover) is assessed at \$18.00. These values are averages calculated on the basis of 33 completed questionnaires.

Cereal grains: Grains were assessed at \$2.75 per 100 pounds, a value corresponding to what is generally found and accepted in the region.

Pasture: There is no ideal method for estimating the expenses to be charged to pasturage as a component in the feeding of the flock. In this study, we have used \$8.36 as the figure for the cost of maintaining one acre of cultivated pasture-land and \$4.18 for permanent pasture. These data are taken from a study carried out by a group of graduate students from the Department of Rural Economics in the Faculty of Agriculture of Laval University (2).

Because there are wide variations in the number of acres available for sheep pasture, we felt that we should charge the equivalent of half an acre per ewe as the contribution made by pasture-land to feed.

A second entry under expenses which is linked to the cost of pasturage is the interest on the value of the land. This rate is set at 7 percent.

In short, the cost of pasturage corresponds to the number of adults being pastured multiplied by 0.5 acre/adult the whole then being multiplied by \$8.36 or \$4.18, depending on the type of pasture. The interest charges are added to this.

ANNEX I (continued)

This method has its weaknesses, but some of the results we have noted show that the cost of pasturage is about \$10.00/acre. However, it is impossible to retrace the origin of such a figure, except in the study of sheep production in the Gaspé and Lower St. Lawrence (3), in which a method based on the theoretical needs of the flock was used.

Gross margin: The gross margin is the difference between the gross return and the specific expenses. In theory, the result per ewe should be relatively constant for each unit added to or subtracted from the basic flock.

General expenses: These are the expenses which are separate from the flock and which affect the farm as a whole.

Depreciation of the sheepfold: The depreciation rate was set at 5 percent of the value of the sheepfold at the beginning of the fiscal period. The method used is "the constant rate on a decreasing balance". Using the straight line method, this rate would work out to 2.5 percent.

Depreciation of equipment: The depreciation rate is 10 percent of the value at the beginning of the fiscal period and the method used is exactly the same as in the preceding item.

Insurance and land taxes: Insurance and land tax rates were provided by the regional office of the Department of Agriculture and colonization of the Ottawa Valley after checking them with municipal secretaries and agricultural insurance companies. Fire insurance rates are in the neighborhood of \$0.60 per \$100.00 of assessed value. As far as land taxes are concerned, each municipality has information provided by the farmer and the rates vary depending on the municipality and the assessment value.

Estimated overhead expenses: This item includes charges for electricity, telephone, contributions and stationery. In view of the difficulty of dividing these expenses up properly in relation to the farm's other speculations, we did some

ANNEX I (concluded)

calculations based on some data made available in the questionnaire, which made it possible to place them in the neighborhood of \$0.75 per ewe. This is the rate which we have used.

Remuneration for labor and management: This is the difference between the gross margin and the divided general expenses. This is similar to the idea of net operating income.

Estimated value of labor and management: We have used a rate of \$1.50 per hour of labor because we consider this to be a minimum remuneration for agriculture. This rate is applied to the number of hours of labor from which the hours of paid labor have been deducted since the cost of paid labor is included in specific expenses.

Profit or loss: It should be clearly understood that this item does not correspond to a monetary profit or loss. It means the ability of sheep speculation to meet all its expenses (specific, general, labor and management), both real and assigned.

Credits: This item is used in the calculation of production costs. It includes those elements of income which do not come directly from lamb sales. Credits include the sale of cash stock, income in kind, wool sales and manure production.

ANNEX II

DATA CONNECTED WITH MARKET LAMBS LISTED BY PRODUCER AND SHIPMENT

Month of Sale	Number in the Shipment	Age (Wk-Mo) at Time of Shipment	Average Live Weight Per Lot (1b)	Selling Price Per Lamb \$
April	20	2-3 months	40	26.
May	15	2-3 months	40	26.
March	23	6-8 weeks	35-40	26.
March	7	6-8 weeks	35-40	26.
April	30	6-8 weeks	35-40	26.
March	6	1-12 weeks	20-35	26.
April	14	1-12 weeks	20-35	26.
April	2	1-12 weeks	20-35	27.50
May	74	1-12 weeks	20-35	25.
May	2	1-12 weeks	20-35	26.
June	1	1-12 weeks	20-35	25.
April	20	2 weeks	30	24.
May	10	2 months	30	24.
June	4	2 months	30	24.
March	1	0-2 weeks	10	15.
June	1	3-4 months	56	33.18
July	1	2½ months	35	26.
July	1	3-4 months	50	20.71
April, May	36		30-40	35 at \$20. 1 at \$23.
June	20	3 months	60-70	24.
July	4	3 months	60-70	24.50
July	16	3 months	60-70	23.
October	18	6 months	80-90	23.
June	18	2 months	35-40	20.
July	18	3 months	40-45	20.
August	6	4 months	45	20.
June	42	2½-3 months	45	20.
July	11	3 months	45	20.
July	6	3 months	45	22.
July	20	4 months	80	20.
October	18	6 months	75	18.50

ANNEX II

DATA CONNECTED WITH MARKET LAMBS LISTED BY PRODUCER AND SHIPMENT
(continued)

Months of Sale	Number in the Shipment	Age (Wk-Mo) at Time of Shipment	Average Live Weight Per Lot (lb)	Selling Price Per Lamb \$
June	1	2½ months	25	17.
November	6	8-9 months	25-30	23.
March	15	2 months	30	20.
April	20	2 months	30	20.
May	17	2 months	30	20.
August	35	6 months	45	12.50
June	35	4 months	70	20.
November	7	6 months	70	20.
March	10	2 months	30	22.
May	30	3 months	40	22.
June	25	2½ months	35	22.
August	5	5 months	60	22.
March	10	2 months	25	21.
June	23	4 months	45-50	21.
March, April	70	2 months	40	26.
May	2		35	35.
June	24	4 months	50	21.
June	9	4 months	50	16.
July	1	4-5 months	100	24.
September	33	6 months	40	10.48
October	1	7½ months	50	10.
April, May	81	6-8 weeks	40-50	26.
June				
April	10	5-6 weeks	30-35	23.
May	40	2 months	35-40	23.
June	30	2 months	35-40	23.
July	15	10-11 weeks	45-50	23.
April	140	2 months	25-30	22.
April	40	2 months	25-30	25.
March	16	2 months	45	26.25
April	7	2-3 months	50	26.25
December	4	7 months	80	26.25

ANNEX II

DATA CONNECTED WITH MARKET LAMBS LISTED BY PRODUCER AND SHIPMENT (concluded)

Months of Sale	Number in the Shipment	Age (Wk-Mo) at Time of Shipment	Average Live Weight Per Lot (lb)	Selling Price Per Lamb \$
March	35	4-5 weeks	30	22.
April	20	4-6 weeks	35	22.
May	13	4-6 weeks	35-45	22.
June	23	6 weeks	45	20 at \$22. + 3 at \$21
September	13	2-3 months	60	18.
October	2	5 months	110	35.
July	20	2-3 months	60	25.
July	10	3-4 months	60-70	25.
August	25	5 months	95	25.
March	1	1-2 months	30-50	25.
April	11	1-3 months	30-50	25.
May	8	2-3 months	30-50	25.
July	24	2-3 months	30-50	25.
August	22	2-4 months	30-50	25.
September	20	2-5 months	30-50	25.
October	24	2-5 months	30-50	25.
November	30	5 months	30-50	29 at \$25. 1 at \$20
October	30	5-7 months	87	23.40
October	17	5-7 months	63.5	15.24
October	3	5-7 months	107	4.27
October	2	5-7 months		25.
March	47	2 months	35	23.
May	47	3 months	40	23.
April	16	3 months	35-40	26.
September	27	6 months	65-70	26.
September	6	6 months	65-70	26.
March	20	8-9 weeks	35-40	22.
April	20	8-9 weeks	35-40	22.
April	20	8-9 weeks	35-40	22.
March	15	6-8 weeks	35	20.
May	18	7-12 weeks	40	20.
June	10	6-9 weeks	35	20.
June	10	6-9 weeks	35	20.
July	5	10 weeks	35	20.
March	40	3-7 weeks	28	22.
May	20	7-11 weeks	35	22.
June	20	10-16 weeks	45	22.

TABLE I - PHYSICAL RESOURCES - STRATUM I

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
Land				
Size				
Uncleared Area (Acres)	72.3	252.2	227.5	217.5
Cleared Area	85.7	124.6	111.5	116.2
Total Area	158.0	373.4	339.0	331.4
Use of Cleared Area				
Area Planted with Grain	6.3	8.8	11.0	8.6
Area Planted with Hay	24.7	53.8	28.0	45.6
Area Used as Sheep Pasture	38.7	42.5	72.5	45.4
Area Used for Other Pasture	16.0	17.3	0.0	15.1
Other	0.0	0.0	0.0	0.0
Stock				
Cattle Animal Units	5.3	12.0	9.8	10.6
Horse Animal Units	0.5	1.6	1.5	1.4
Sheep Animal Units	6.9	7.0	5.6	6.8
Swine Animal Units	0.0	0.0	0.0	0.0
Total Animal Units	12.8	20.6	16.9	18.8
% Sheep A.U./Total A.U.	<u>69.3</u>	<u>69.1</u>	<u>42.9</u>	<u>66.1</u>
Sheep Buildings				
Area Use (sq. ft.)	<u>850.7</u>	<u>1,752.9</u>	<u>994.0</u>	<u>1,504.4</u>
Labor				
Labor Devoted to Sheep (Hours)	862	712	645	730

TABLE 2 - PHYSICAL RESOURCES - STRATUM II

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average 3/15
Land				
Size				
Uncleared Area (Acres)	89.3	135.9	229.0	145.2
Cleared Area	107.3	115.8	82.7	107.5
TOTAL AREA	196.7	251.7	311.7	252.7
Use of Cleared Area				
Area Planted with Grain	20.0	10.6	12.0	12.7
Area Planted with Hay	50.7	28.9	25.0	32.5
Area Used as Sheep Pasture	30.7	48.7	34.0	42.1
Area Used for Other Pasture	6.0	19.2	0.0	12.7
Other	0.0	8.4	11.7	7.4
Stock				
Cattle Animal Units	7.7	2.8	1.7	3.5
Horse Animal Units	0.0	4.8	1.2	3.1
Sheep Animal Units	14.9	12.4	14.3	13.3
Swine Animal Units	0.0	1.1	0.0	0.7
TOTAL ANIMAL UNITS	22.6	21.1	17.1	20.6
% Sheep A.U./Total A.U.	<u>73.9</u>	<u>77.1</u>	<u>85.1</u>	<u>78.1</u>
Sheep Buildings				
Area Used (sq. ft.)	<u>3,366.0</u>	2,507.7	<u>1,643.3</u>	<u>2,506.5</u>
Labor				
Labor Devoted to Sheep (Hours)	715	604	820	670

TABLE 3 - INVESTMENTS - STRATUM I

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
<u>Sheep Investments</u>				
Sheep:				
Initial Value	1,432	1,193	944	1,206
Final Value	2,063	1,532	658	1,523
Adjustments	632	339	- 286	317
Average Value	1,748	1,363	801	1,364
Sheepfold:				
Initial Value	987	1,797	2,048	1,683
Final Value	938	1,588	1,945	1,515
Adjustments	- 48	- 209	- 103	- 168
Average Value	963	1,692	1,996	1,599
Sheep Equipment:				
Initial Value	35	35	34	35
Final Value	46	54	31	50
Adjustments	+ 11	+ 20	- 4	+ 15
Average Value	41	45	32	42
Sheep Pasture:				
Initial Value	1,115	2,019	2,350	1,898
Final Value	1,115	2,019	2,350	1,898
Adjustments	0	0	0	0
Average Value	1,115	2,019	2,350	1,898
Totals:				
Initial Value	3,569	5,043	5,375	4,822
Final Value	4,163	5,193	4,983	4,986
Adjustments	669	529	- 180	470
Average Value	3,866	5,118	5,179	4,904

TABLE 4 - INVESTMENTS - STRATUM II

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
Sheep Investments				
Sheep:				
Initial Value	2,953	2,315	2,543	2,488
Final Value	3,015	2,004	2,945	2,395
Adjustments	62	- 311	401	- 94
Average Value	2,984	2,160	2,744	2,441
Sheepfold:				
Initial Value	4,788	4,035	1,940	3,766
Final Value	4,552	3,833	1,843	3,579
Adjustments	- 237	- 201	- 97	- 187
Average Value	4,670	3,934	1,892	3,673
Sheep Equipment:				
Initial Value	43	36	35	38
Final Value	39	52	32	45
Adjustments	-	+ 15	- 4	+ 8
Average Value	41	44	34	41
Sheep Pasture:				
Initial Value	2,500	2,858	2,253	2,666
Final Value	2,500	2,858	2,253	2,666
Adjustments	0	0	0	0
Average Value	2,500	2,858	2,253	2,666
Totals:				
Initial Value	10,285	9,244	6,772	8,958
Final Value	10,106	8,748	7,073	8,684
Adjustments	302	- 124	502	86
Average Value	10,196	8,996	6,923	8,821

TABLE 5 - TECHNICAL EFFICIENCY - STRATUM I

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
<u>The Flock</u>				
Ewes Wintered	48.67	42.75	38.50	43.29
Ewes Bred	48.67	40.67	38.50	41.82
Ewes With Lamb	47.33	37.25	30.00	38.18
Ewes With Lamb/Ewes Wintered	0.98	0.87	0.76	0.88
Ewes With Lamb/Ewes Bred	0.98	0.92	0.76	0.91
Lambs Born	77.00	55.83	34.00	57.00
Lambs Surviving	74.67	46.33	25.50	48.88
Lambs Born/Ewes With Lamb	1.61	1.52	1.17	1.49
Lambs Surviving/Ewes With Lamb	1.55	1.26	0.88	1.27
Lambs Sold	63.67	39.00	22.50	41.41
% Lambs Lost	3.73	18.09	25.00	16.37
% Adults Lost	4.81	4.77	13.38	5.79
lb of Wool Produced/Head Shorn	6.70	6.53	6.40	6.55
Replacement Stock	9.67	6.25	2.50	6.41
Rate of Flock Growth	44.05	28.64	-24.89	25.06
<u>Sheep Buildings</u>				
Size (Square feet)	850.67	1,752.92	994.00	1,504.41
Sheep A.U. Wintered	7.50	6.59	5.96	6.68
Sq. Ft./Sheep A.U. Wintered	124.32	262.86	144.35	224.47
Sq. Ft./Adult Wintered	18.52	39.17	21.49	33.45
<u>Marketing</u>				
No. of Market Lambs Sold	63.67	39.00	22.50	41.41
No. of Breeding Stock (Fem.) Sold	14.67	0.92	19.50	5.53
No. of Reproductive Rams Sold	1.00	0.33	0.50	0.47
Average Weight/Market Lamb Sold	39.67	42.75	62.50	44.53

- continued

TABLE 5 - TECHNICAL EFFICIENCY - STRATUM I (concluded)

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
<u>Feeding</u>				
Amount of Hay Consumed (lb)	40,333.33	42,758.33	47,750.00	42,917.65
Amount of Hay Consumed/Adult Wintered	817.30	956.50	1,214.97	962.35
Amount of Concentrates Consumed (lb)	5,666.67	6,860.42	10,225.00	7,045.59
Amount of Concentrates Consumed/Adult	104.87	161.45	287.29	166.27
Amount of Concentrates Consumed/Sheep A.U.	703.81	1,084.26	1,929.41	1,116.55
Total Area Sheep Pasture/Sheep A.U.	5.39	6.66	15.29	7.45
Total Area Sheep Pasture/Adult Wintered	0.70	1.03	2.22	1.11
Feed Produced/Total Feed (%)	69	83	64	78
<u>Labor</u>				
Total Hours/Year	861.67	711.67	645.00	730.29
Hours/Year/Ewe Wintered	16.90	17.02	16.62	16.95
Hours Worked During the Time Shut-in Time	760.67	580.08	475.50	599.65
Hours of Shut-in Time/Ewe Wintered	14.80	13.93	12.61	13.93
Hours Worked During Pasture Time	101.00	131.58	169.50	130.65
Hours of Pasture Time/Ewe Wintered	2.10	3.09	4.01	3.02

TABLE 6 - TECHNICAL EFFICIENCY - STRATUM II

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
<u>The Flock</u>				
Ewes Wintered	95.00	82.22	89.00	86.13
Ewes Bred	91.67	82.22	83.00	84.27
Ewes with Lamb	89.67	80.56	69.33	80.13
Ewes with Lamb/Ewes Wintered	0.94	0.98	0.78	0.93
Ewes with Lamb/Ewes Bred	0.97	0.98	0.83	0.95
Lambs Born	138.33	107.44	93.00	110.73
Lambs Surviving	126.33	87.56	66.00	91.00
Lambs Born/Ewes With Lamb	1.56	1.36	1.34	1.39
Lambs Surviving/Ewes With Lamb	1.44	1.09	0.98	1.13
Lambs Sold	118.33	82.00	44.67	81.80
% Lambs Lost	8.09	18.97	27.02	18.40
% Adults Lost	3.71	5.67	8.44	5.83
Lb of Wool Produced/Head Shorn	6.98	6.09	6.96	6.44
Replacement Stock	7.33	4.44	21.00	8.33
Rate of Flock Growth	4.59	-5.19	20.80	1.96
<u>Sheep Buildings</u>				
Size (Square Feet)	3,366.00	2,507.67	1,643.33	2,506.47
Sheep A.U. Wintered	14.57	12.61	13.75	13.23
Sq. Ft./Sheep A.U. Wintered	253.18	197.03	119.78	192.81
Sq. Ft./Adult Wintered	37.82	29.39	17.83	28.76
<u>Marketing</u>				
No. of Market Lambs Sold	118.33	82.00	44.67	81.80
No. of Breeding Stock (Fem.) Sold	1.33	8.33	1.33	5.53
No. of Reproductive Rams Sold	1.33	0.67	0.67	0.80
Average Weight/Market Lamb Sold	35.00	41.44	70.00	45.87

- continued -

TABLE 6 - TECHNICAL EFFICIENCY - STRATUM II (concluded)

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
<u>Feeding</u>				
Amount of Hay Consumed (1b)	82,190.00	73,420.00	97,083.33	79,906.67
Amount of Hay Consumed/Adult Wintered	845.37	870.00	1,072.94	906.13
Amount of Concentrates Consumed (1b)	11,585.33	13,892.11	12,333.33	13,119.00
Amount of Concentrates Consumed/Adult	120.33	172.55	139.14	155.42
Amount of Concentrates Consumed/Sheep A.U.	805.15	1,156.24	933.20	1,041.41
Total Area Sheep Pasture/Sheep A.U.	2.22	3.76	2.30	3.16
Total Area Sheep Pasture/Adult Wintered	0.34	0.56	0.35	0.47
Feed Produced/Total Feed (%)	93	68	91	78
<u>Labor</u>				
Total Hours/Year	715.00	604.22	820.33	669.60
Hours/Year/Ewe Wintered	8.18	7.54	10.16	8.19
Hours Worked During Shut-in Time	611.33	505.11	557.00	536.73
Hours of Shut-In Time/Ewe Wintered	6.93	6.32	6.96	6.57
Hours Worked During Pasture Time	103.67	99.11	263.33	132.87
Hours of Pasture Time/Ewe Wintered	1.25	1.22	3.20	1.62

TABLE 7 - SHEEP FARM ACCOUNT - STRATUM 1

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
<u>Gross Return From Sheep Production</u>				
Stock Sales				
Breeding Stock	421.	33.	396.	144.
Market Lambs	1,462.	849.	302.	893.
Cast Stock	0.	1.	6.	1.
Total	1,883	882.	704.	1,308.
Income In Kind From Sheep				
Adjustments				
Less Purchases:	Rams	23.	13.	30.
	Ewes	285.	195.	377.
	Ewe-Lambs	0.	0.	0.
Total	-936.	-308.	-208.	407.
Wool: Sales and Income In Kind Subsidies	60. 39.	67. 47.	58. 40.	65. 45.
Total	99.	114.	97.	109.
Value of Manure Production	192.	197.	153.	191.
Total Gross Return	1,905.	1,254.	460.	1,276.
<u>Specific Expenses:</u>				
Feed Purchased				
Hay	108.	34.	311.	97.
Concentrates	173.	137.	208.	152.
Supplements	6.	7.	3.	6.
Total	288.	178.	522.	238.
Feed Produced				
Hay	273.	388.	162.	341.
Grain	28.	85.	152.	83.
Pasture	312.	348.	402.	348.
Total	613.	821.	715.	772.

- continued -

TABLE 7 - SHEEP FARM ACCOUNT - STRATUM I (concluded)

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
<u>Total Cost of Feed</u>	901.	999.	1,237.	
Minerals and Vitamins	15.	15.	11.	14.
Medicine and Veterinary Services	58.	31.	121.	46.
Paid Labor	18.	29.	183.	45.
Transp. Costs & Mktng - Transp. Subs.	2.	2.	4.	2.
Equipment Maintenance and Repair	0.	0.	0.	0.
Interest on Stock (7%)	122.	95.	56.	95.
Other Costs	0.	0.	0.	0.
Total	215.	172.	375.	203.
Total Specific Expenses	1,116.	1,171.	1,611.	1,213.
Gross Margin	789.	83.	-1,152.	62.
<u>Divided General Expenses</u>				
Sheepfold Depreciation	48.	90.	103.	84.
Equipment Depreciation	4.	5.	4.	4.
Total	52.	94.	106.	88.
Sheepfold & Fence Maintenance & Repair	47.	78.	17.	65.
Rent Land	58.	18.	50.	29.
Interest on Buildings & Equipment	70.	126.	142.	118.
Insurance & Land Tax	43.	78.	68.	71.
"Estimated" Overhead Expenses	36.	32.	29.	32.
Total	254.	332.	306.	315.
Total General Expenses	307.	426.	412.	403.
Remuneration for Labor & Management	482.	-343.	-1,563.	-341.
Estimated Value of Labor & Management (\$1.50/hr.)	1,293.	1,068.	790.	1,075.
Profit Or Loss	-810.	-1,411.	-2,353.	-1,416.

TABLE 8 - SHEEP FARM ACCOUNT - STRATUM II

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
<u>Gross Return From Sheep Production</u>				
Stock Sales				
Breeding Stock	89.	185.	63.	141.
Market Lambs	2,783.	1,830.	1,040.	1,863.
Cast Stock	0.	11.	32.	13.
Total	2,871.	2,026.	1,135.	2,017.
Income In Kind From Sheep	8.	23.	8.	17.
Adjustments	62.	-311.	415.	-91.
Less Purchases:				
Rams	75.	32.	40.	42.
Ewes	0.	59.	250.	85.
Ewe-Lambs	0.	0.	0.	0.
Total	-75.	-90.	-290.	-127.
Wool: Sales and Income In Kind				
Subsidies	174.	119.	125.	131.
	110.	82.	94.	90.
Total	284.	201.	220.	221.
Value of Manure Production	424.	354.	403.	378.
Total Gross Return	3,574.	2,202.	1,891.	2,414.
<u>Specific Expenses:</u>				
<u>Feed Purchased</u>				
Hay	0.	216.	103.	150.
Concentrates	116.	258.	80.	194.
Supplements	6.	13.	7.	11.
Total	122.	487.	190.	355.
Feed Produced				
Hay	573.	450.	782.	541.
Grain	242.	119.	182.	156.
Pasture	461.	533.	509.	513.
Total	1,276.	1,102.	1,473.	1,210.

TABLE 8 - SHEEP FARM ACCOUNT - STRATUM II (concluded)

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
Total Cost of Feed	1,398.	1,589.	1,662.	1,566.
Minerals and Vitamins	23.	13.	14.	15.
Medecine and Veterinary Services	102.	68.	104.	82.
Paid Labor	29.	43.	408.	113.
Transp. Costs & Mktng - Transp. Subs.	0.	4.	24.	7.
Equipment Maintenance & Repair	2.	2.	0.	2.
Interest on Stock (7%)	209.	151.	192.	171.
Other Costs	0.	0.	0.	0.
Total	365.	281.	741.	390.
Total Specific Expenses	1,762.	1,871.	2,403.	1,956.
Gross Margin	1,812.	331.	-512.	459.
<u>Divided General Expenses</u>				
Sheepfold Depreciation	237.	201.	97.	187.
Equipment Depreciation	4.	5.	4.	5.
Total	241.	206.	100.	192.
Sheepfold & Fence Maintenance & - Repair	2.	66.	200.	80.
Rent Land	0.	31.	150.	48.
Interest on Buildings & Equipment (7%)	330.	278.	135.	260.
Insurance and Land Tax	110.	140.	174.	141.
"Estimated" Overhead Expenses	71.	62.	67.	65.
Total	513.	578.	726.	595.
Total General Expenses	754.	784.	827.	786.
Remuneration for Work & Management	1,058.	-452.	-1,339.	-328.
Estimated Value of Work and Management (\$1.50/hr.)	1,073.	906.	765.	911.
Profit or Loss	-14.	-1,359.	2,104.	-1,239.

TABLE 9 - SHEEP PRODUCTION COSTS - STRATUM I

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average 3/17
<u>Specific Expenses</u>				
Fodder				
Feed Purchased				
Hay	108.	34.	311.	79.
Concentrates	173.	137.	208.	152.
Supplements	6.	7.	3.	6.
TOTAL	288.0	177.9	521.5	237.8
Feed Produced				
Hay	273.	388.	162.	341.
Grain	28.	85.	152.	83.
Pasturage	312.	348.	402.	348.
TOTAL	613.0	821.3	715.0	772.1
Total Cost of Feed Fodder	901.0	999.3	1,236.5	1,009.8
Vitamins and Minerals	15.	15.	11.	14.
Medicine and Veterinary Services	58.	31.	121.	46.
Paid Labor	18.	29.	183.	45.
Transportation Costs + Marketing	2.	2.	.4.	2.
Transportation Subsidies	0.	0.	0.	0.
Equipment Maintenance & Repair	122.	95.	56.	95.
TOTAL	215.0	172.1	374.5	203.5
Total Specific Expenses	1,116.0	1,171.3	1,611.0	1,213.3
Specific Expenses/Ewe Wintered	22.2	28.0	42.0	28.6
Specific Expenses/Lamb Surviving	14.6	28.0	63.3	29.8

TABLE 9 - SHEEP PRODUCTION COSTS - STRATUM I (concluded)

	Top 3/17	Intermediate 3/17	Bottom 3/17	Group Average
Divided General Expenses (including labor & management)				
Depreciation of the Sheepfold	48.	90.	103.	84.
Equipment Depreciation	4.	5.	4.	4.
Maintenance & Repair of the Sheepfold & Fences	47.	78.	17.	65.
Rent for the Land	58.	18.	50.	29.
Interest on Buildings & Equipment (7%)	70.	126.	142.	118.
Insurance and Land Tax	43.	78.	68.	71.
"Estimated" Overhead Expenses	36.	32.	29.	32.
Estimated Value of Labor & Management (\$1.50/hr.)	1,293.	1,068.	968.	1,095.
Total	1,599.1	1,493.4	1,379.1	1,498.6
Total General Expenses (including labor & management)	1,599.1	1,493.4	1,379.1	1,498.6
General Expenses/Ewe Wintered	31.9	35.6	34.9	34.8
General Expenses/Lamb Surviving	20.5	34.5	52.7	34.1
Total Expenses	2,715.1	2,664.8	2,990.1	2,711.9
Total Expenses/Ewe Wintered	54.1	63.5	76.9	63.5
Total Expenses/Lamb Surviving	35.1	62.4	116.0	63.9
Credits	291.0	311.8	255.5	301.5
Total Net Cost	2,424.1	2,353.0	2,734.6	2,410.5
Net Cost/Ewe Wintered	48.1	56.3	70.1	56.4
Net Cost/Lamb Surviving	31.0	55.0	105.7	56.8

TABLE 10 - SHEEP PRODUCTION COSTS - STRATUM II

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
Specific Expenses				
Fodder				
Feed Purchased	0.	216.	103.	150.
Hay	116.	258.	30.	194.
Concentrates	6.	13.	7.	11.
Supplements				
Total	122.0	487.3	190.0	354.8
Feed Produced				
Hay	573.	450.	782.	541.
Grain	242.	119.	182.	156.
Pasturage	461.	533.	509.	513.
Total	1,275.7	1,102.0	1,472.0	1,210.7
Total Cost of Feed Fodder	1,397.7	1,589.3	1,662.0	1,565.5
Vitamins and Minerals	23.	13.	14.	15.
Medicine & Veterinary Services	102.	68.	104.	82.
Paid Labor	29.	43.	408.	113.
Transportation Costs + Marketing				
Transportation Subsidies	0.	4.	24.	7.
Equipment Maintenance & Repair	2.	2.	0.	2.
Interest on Stock (7%)	209.	151.	192.	171.
Total	364.7	281.4	741.3	390.1
Total Specific Expenses	1,762.3	1,870.2	2,403.3	1,955.6
Specific Expenses/Ewe Wintered	18.8	22.8	27.3	22.9
Specific Expenses/Lamb Surviving	13.6	21.7	37.2	23.2

TABLE 10 - SHEEP PRODUCTION COSTS - STRATUM II (concluded)

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
Divided General Expenses (including Labor & Management)				
Depreciation of the Sheepfold	237.	201.	97.	187.
Equipment Depreciation	4.	5.	4.	5.
Maintenance & Repair of the Sheepfold and Fences	2.	66.	200.	80.
Rent on the Land	0.	31.	150.	48.
Interest on Buildings and Equipment (7%)	330.	278.	135.	260.
Insurance and Land Tax	110.	140.	174.	141.
"Estimated" Overhead Expenses	71.	62.	67.	65.
Estimated Value of Labor and Management (\$1.50/hr.)	1,073.	906.	1,231.	1,004.
TOTAL	1,826.3	1,690.1	2,057.2	1,790.8
Total General Expenses (including Labor & Management)	1,826.3	1,690.1	2,057.2	1,790.8
General Expenses/Ewe Wintered	20.3	20.7	25.1	21.5
General Expenses/Lamb Surviving	15.0	19.5	31.5	21.0
<u>Total Expenses</u>	3,588.6	3,560.9	4,460.5	3,746.4
Total Expenses/Ewe Wintered	39.1	43.5	52.4	44.4
Total Expenses/Lamb Surviving	28.6	41.2	68.7	44.2
<u>Credits</u>	708.0	565.7	655.0	612.0
<u>Total Net Cost</u>	2,880.6	2,995.3	3,805.5	3,134.4
Net Cost/Ewe Wintered	31.6	36.6	45.1	37.3
Net Cost/Lamb Surviving	22.8	34.5	58.6	37.0

TABLE 11 - ECONOMIC EFFICIENCY - STRATUM I

	Top 3/17	Intermediate 11/17	Bottom 3/17	Group Average
<u>Income Per Ewe Wintered</u>				
Income From Stock Sales/Ewe Wintered	36.34	21.36	17.20	23.52
Income from Wool + Subsidy/Ewe Wintered	2.04	2.67	2.60	2.55
Prev. Deduct Var. Inv. + Manure value/Ewe Wintered	15.75	13.01	-0.46	11.91
Less: Animal Purchase/Ewe Wintered	16.14	7.22	6.92	8.76
Gross Produce/Ewe Wintered	38.00	29.82	12.41	29.22
Total Charges/Ewe Wintered	54.10	63.50	76.90	63.50
Average Price			14.00	20.71
<u>Average Price for Market Lambs</u>				
Capital Investment in Sheep/Ewe Wintered	73.53	122.31	131.01	114.73
Gross Margin/Ewe Wintered	15.81	1.83	-29.59	0.60
Gross Margin/Hr. of Labor	1.13	0.13	-1.78	0.08
Remuneration for Labor and	9.22	-8.20	-39.58	-8.82
Remuneration for Labor and	0.54	-0.53	-2.38	-0.56
Grazing Cost/Acre of Pasture	9.64	10.52	6.50	9.89
Profit/Ewe Wintered	-16.13	-33.73	-60.97	-33.83

TABLE 12 - ECONOMIC EFFICIENCY - STRATUM II

	Top 3/15	Intermediate 9/15	Bottom 3/15	Group Average
<u>Income Per Ewe Wintered</u>				
Income From Stock Sales/Ewe Wintered	30.24	23.82	13.57	23.05
Income from Wool + Subsidy/Ewe Wintered	3.02	2.44	2.44	2.56
Prev. Deduct Var. Inv. + Manure value/Ewe Wintered	5.56	1.83	9.71	4.15
Less: Animal Purchase/Ewe Wintered	0.58	1.34	3.41	1.60
Gross Produce/Ewe Wintered	38.24	26.76	22.31	28.16
Total Charges/Ewe Wintered	39.10	43.50	52.40	44.40
<u>Average Price</u>				
Average Price for Market Lambs	24.00	21.78	23.67	22.60
Capital Investment in Sheep/Ewe Wintered	110.23	107.36	81.40	102.74
Gross Margin/Ewe Wintered	19.48	3.92	-4.94	5.26
Gross Margin/Hr. of Labor	2.55	0.49	-0.95	0.61
Remuneration for Labor and Remuneration for Labor and	11.46	-5.46	-14.80	-3.95
Grazing Cost/Acre of Pasture	1.51	-0.90	-2.10	-0.66
Profit/Ewe Wintered	17.54	12.19	16.90	14.21
	-0.81	-16.77	-24.78	-15.18

3 1761 11551727 8

